U.S. DEPARTMENT OF ENERGY

# CENTER FOR SOLAR AND THERMAL ENERGY CONVERSION (CSTEC)

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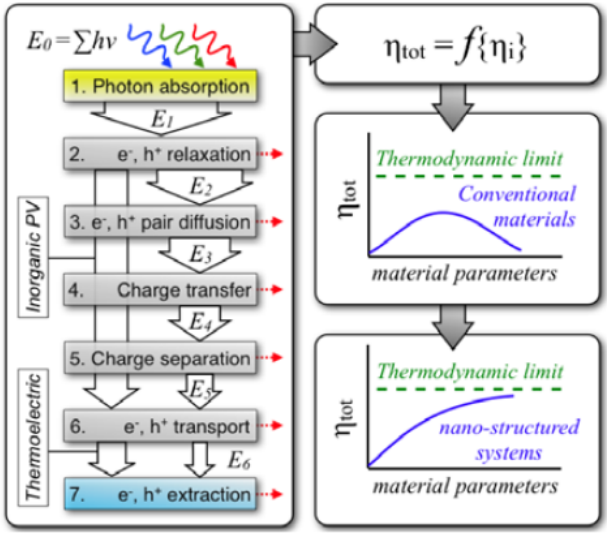
**Summary statement:** The goal of the center is to develop the science necessary to elucidate and mitigate energy loss processes in low dimensional, and/or complex nanostructured, organic, inorganic, and hybrid materials for high efficiency photovoltaic (PV) and thermoelectric (TE) energy conversion.




## RESEARCH PLAN AND DIRECTIONS

The research will involve cross-cutting efforts in theory, computation, materials synthesis and physical property measurements, including the use of ultrafast optical spectroscopy techniques. It will lead to a fundamental understanding of the dynamics and interactions of charge carriers and phonons, which is essential to control and to "tailor" the conversion efficiencies of low dimensional, and/or complex nanostructured, organic, inorganic, and hybrid materials for TE and PV applications.